XXX. *Some Account of the Spiral Tubes or Ligaments in the Genus Terebratula of Lamarck, as observed in several Species of Fossil Shells. By Mr. James Sowerby, F.L.S.*

Read December 6, 1814; *and February* 7, 1815.

I HAVE the honour of submitting to the Linnean Society a sketch, showing the general construction with the extraordinary spiral and perhaps originally cartilaginous tubes of a certain division of the genus *Anomia* of Linnæus, or *Terebratula* of Lamarck. The *Anomia striata* of Martyn is represented at Fig. 2. (TAB. XXVIII.), having its triangular aperture between the beaks, which is characteristic of the division. In this species the side of the spiral tube is of a darker colour than the crystallized carbonate of lime which fills the shell, the whole being limestone. It is probable that these peculiar constructions may give characters to new genera, of which many species are found in England, France, Ireland, and even in New Holland, imbedded in limestone, flint, chert, or sandstone. In a specimen brought from New Holland by Mr. Brown, one only of the spiral tubes is to be seen; and it was not known positively that the shell ought to have two, until, a short time since, I discovered in my collection a complete specimen, from which Fig. 1. is taken.

Fig. 1.

Fig. 1. *Terebratula striata, Anomia striata* of Martyn*. The lower valve containing the spiral tubes considerably enlarged, the specimen being little more than one inch long.

a. a. Sections of those parts of the spiral tubes by which they are attached to the upper valve.

b. The place of the triangular aperture immediately above the lower beak.

Fig. 2. *Terebratula striata.* The two valves with one end cut off.

a. The triangular aperture between the beaks.

b. Section of the spiral tube near the end.

I suspect *Anomia cuspidata*†, *Linn. Trans. vol.* iv. *Pl.* 4, with the beak of the perforated valve lengthened and reverse, may have a similar construction within, as well as *Anomia subconica* of Martyn, *tab.* 47.

Since I presented to the Society a sketch of an *Anomia* or *Terebratula* with a spiral internal cartilage, I have received a species of *Terebratula* of a very different construction with a spiral cartilage; and I conceive that a figure of this species would be a convenient addition to my former communication, as showing that the spiral cartilage is less confined to shells of a certain external form than might have been expected. Such as I had seen before had straight elongated hinges, and the deeper shell had a triangular foramen, or distant curved beaks indicating it. The present sketch (fig. 3, 4.) represents a shell curved laterally from the hinge, which must be very short, the beaks very small, and without any space for a triangular foramen externally, although within

* Mr. Martyn sent me this specimen some years since. It shows the triangular aperture, although his figure does not; but the shell showed no sign of the tube till I broke it for information.

† Figured, since the reading of this Paper, as *Spirifer cuspidata* in *Mineral Conchology, tab.* 120.

there appears a nearly triangular appendage to the cartilage, which, if not possessed of the outer shell, might indicate a triangular foramen. I presume to lay this sketch before the Linnean Society, hoping that the subject will meet with attention and investigation when opportunity offers. The construction of the shells in my former communication would, without the present specimen, have given an idea of the straight hinge being peculiar to those *Terebratulæ* with a spiral cartilage, as agreeing with Parkinson and Martyn, and might therefore have been misleading. The spiral remains in the present species seem rare, as most of the shells are filled with a hard marley earth. It was found with some other species in Sladacre's Quarry, on the right-hand side of the road leading from Wych to Calwell-Green, a part of the Malvern hills. Some specimens had small round joints of *Encrini* on them.

Tab. XXVIII.

Fig. 3. *Terebratula obtusa.* The remains of the spiral cartilage and the somewhat triangular appendage; the shell having been worn off.

Fig. 4. The marle cast nearly covered with the shell and two small round joints of an *Encrinus*, perhaps the new species mentioned by Mr. Horner* as found also at the Malvern hills.

I add also a drawing of a small *Terebratula*, which might be called *T. sinuata*, with a straight hinge. It seems plentiful in a marley stratum somewhere. I do not think it is noticed in any work; and I shall be glad to learn its locality.

Fig. 5. *T. sinuata*, natural size.

a. Upper side. *b.* Under side.

Fig. 6. *T. sinuata*, magnified upper side.

* Trans. of Geological Society, vol. 2.